62.Health literacy and adherence, do they vary by medication regimen?

Sara J. Deppe, Pharm.D., Mark T. Sawkin, Pharm.D., Steven C. Stoner, Pharm.D., BCPP and Rafia S. Rasu, Ph.D.

KC FREE Health Clinic

UMKC School of Pharmacy

Objective: The purpose in collecting this data, is to determine if a patient with a chronic disease (i.e. diabetes, hypertension, hyperlipidemia, HIV) and lower health literacy is less likely to be adherent to prescribed medication therapy.

Background & Introduction: Achieving medication adherence is an obstacle for many patients after leaving a clinic visit. When patients do not receive their medication properly, a therapeutic intervention cannot be achieved, thus the patient is ultimately not treated for the indication which treatment was initially sought. One avenue of assessing barriers to proper treatment explores the idea that there would be a correlations between health literacy and medication adherence.

The REALM was used to assess patients' health literacy levels quickly during a patient's clinic visit. REALM [Rapid Estimate of Adult Literacy in Medicine] is a validated and reliable tool used to quickly assess health literacy, endorsed by the Agency for Healthcare Research and Quality Medication Adherence Assessment & Demographics. The REALM consists of a list of 66 words that are commonly used by health care providers during an office visit which participants were asked to read aloud. They are then placed into reading level categories by their ability to recognize and properly pronounce these words.

Through these discoveries of literacy and adherence rates, we strive to better understand the rising cost of healthcare when chronic disease states go untreated or mismanaged and learn better ways to educate patients in self-care, thus decreasing expenses and improving chronic disease outcomes.

Methods: This cross sectional study conducted at Kansas City Free Health Clinic gathered data from patients treated in general medicine and HIV primary care divisions, from October 25, 2011 to January 15, 2012. One hundred patients with any chronic disease were eligible for inclusion.

- Qualifying patients at the Kansas City Free Health Clinic were asked if they would like to participate in a research study after their clinic visit was complete
- Upon agreement, participants were given a patient information sheet and also read the verbal consent script by the PI.
- Each patient was read the REALM script and subsequently performed REALM to receive their corresponding score, at the time of their clinic visit.

Medication adherence assessment was completed as the patient reported it, recalling doses missed over the previous two weeks

Limitations:

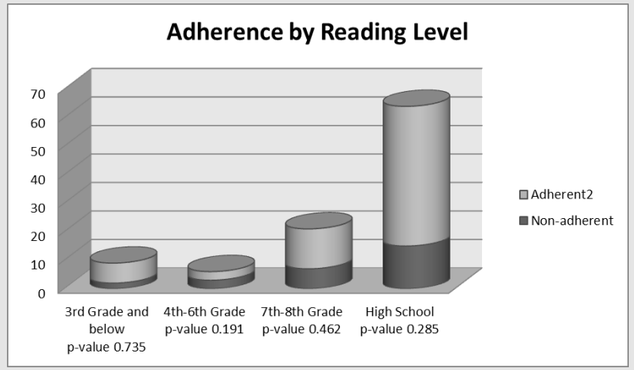
1. Adherence assessment relied upon patient recall, of which patients may have experienced bias in knowing a pharmacist was inquiring, inaccurately remembering actual doses missed or taken, or gave a response they felt may please the interviewer.

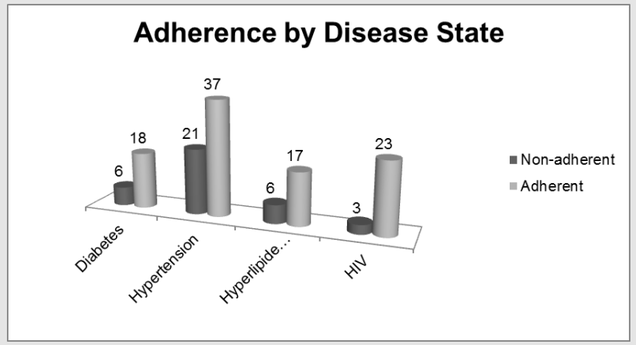
2. Studies and literature cannot agree on a standard adherence rate, This included HIV positive patients on antiretroviral therapy, which requires 90% of all does to be taken properly to achieve viral suppression. Thus, 90% served as the marker for adherence rates of all participants regardless of their HIV status.

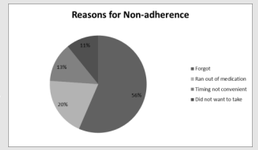
3. Use of the REALM as a tool to assess health literacy indicated that the majority of patients enrolled in this study read at a high school level. This does not reflect the ability of the general U.S. population, which caries an average reading level comparable to 7th-8th grade students.

Patient Demographics

Average Age		48
Age Range		20-66
Gender	Male	44
	Female	56
Race	White	55
	Black	37
	American Indian	4
	Hispanic	3
	Asian	1
Average Education		High School or GED (33)
Average Medication Schedule		Once daily (52)
Average Daily Pill Burden		6
Average Literacy Level		High School (64)
Achieved Adherence		73







Key Findings: We discovered health literacy was not an indicator of a patient's ability to comply with prescription therapy in treating chronic disease conditions. General trends for decreased adherence included lower dose frequency (i.e. once daily dosing) and lower daily pill burden, which is expected, as forgetting to take medication is the most popular reason given for non-adherence. When patients are separated by disease state and evaluated for adherence, those patients who were HIV positive showed the greatest trends toward adherence, followed closely by those with diabetes and then hyperlipidemia. Those patients who have hypertension were found to be the least adherent. This is consistent with the most common reasons given for non-adherence as the hypertensive population had the lowest daily pill burden and dose frequency.

Disease State	Diabetes		Hypertension		Hyperlipidemia		HIV	
Adherent	No	Yes	No	Yes	No	Yes	No	Yes
Number	6	18	21	37	6	17	3	23
Percentage	25%	75%	36%	64%	26%	74%	12%	88%
p-value	.800		.015		.911		.039	

Conclusions: As this study indicates, there is an adherence disparity in the surveyed population which is decreasing patient quality life years as their chronic disease states are not properly managed. Currently, according to the American Diabetes Association, $58 billion dollars are spent in the Unites States healthcare system due directly to diabetic complications. When the CDC evaluated the prevalence of hypertension among Americans, they found that one-third of the population has clinically elevated blood pressure and that only one-half are treated to a controlled level.

Patients report "forgetting to take" and "failure to receive" prescription medication as the most common reasons for not taking their medication as directed. These two areas are key places for health care providers to intervene and improve treatment outcomes. Increased individual patient communication to determine which treatment is best suited to the patient's lifestyle can help the patient establish ownership of their treatment plan and medication taking habits. Health care providers can also streamline their refill process and develop system reminders for regular office visits to assist in timely prescription renewals.

Also of note, there is a difference between adherence levels of patients with different disease states. In this study, patients who were HIV positive showed the best rates of adherence. Within this population, these patients are treated from a multi-disciplinary standpoint. Each patient has an active case manager. This case manager is responsible for being familiar with many aspects of the patient's life and keeping the medical team up to date on psycho-social issues which affect treatment. These patients are also cared for in primary care clinic by physicians, nurses, and pharmacists. When the patient is ready to initiate antiretroviral therapy, peer educators will complete three hour-long sessions with a patient to address their questions, voice their concerns, teach them HIV pathology and how antiretroviral medications work. These patients are also given appointments in medication adherence clinic, which is a pharmacist driven clinic that focuses on creating an effective treatment regimen to set the patient up for adherence success. With all of the aforementioned providers attending to each patient, an environment of ownership is instilled within each patient. They are given the tools necessary to navigate their healthcare and the knowledge to know when a change is necessary.

If the system used to assist HIV positive patients could serve as a model to those patients treated in general medicine clinic, providers may observe greater adherence among their patients who understand the severity of their disease, the importance of treating to a clinical goal, and taking greater responsibility for their health.